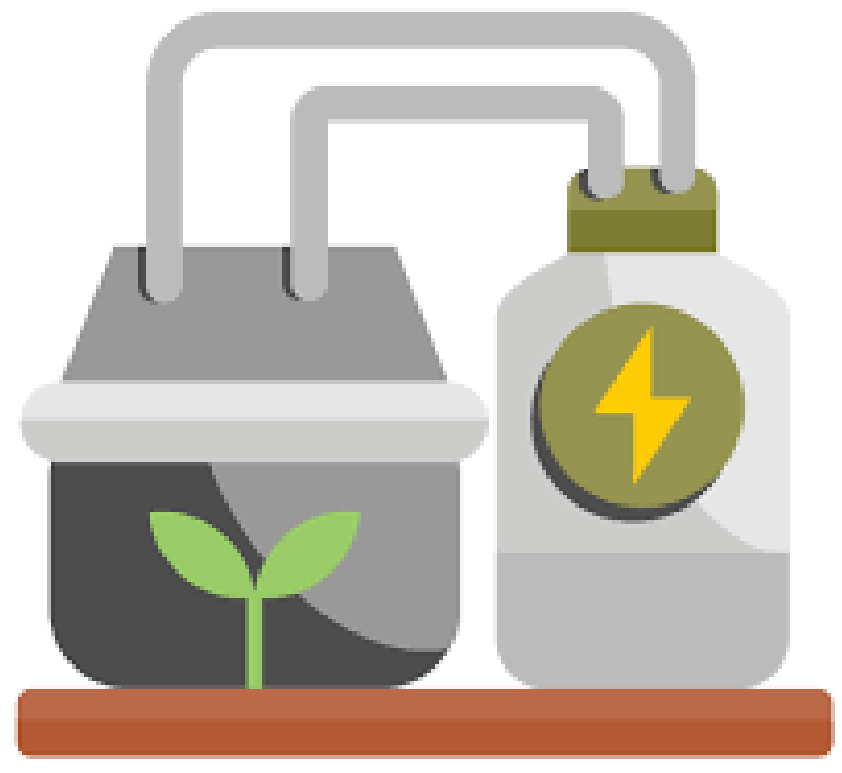


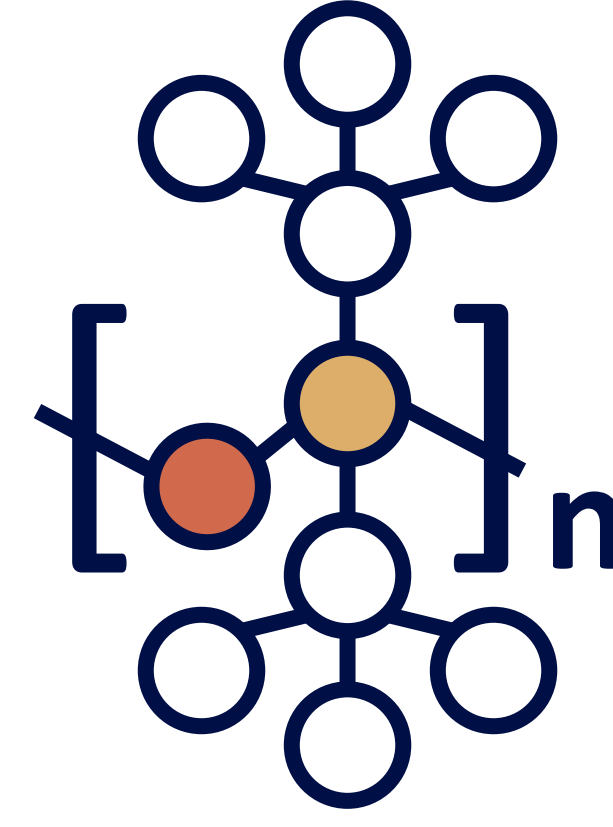
How do biomethane impurities affect combustion appliances?

K.M. Ng, T.S.M. Fernando, M.R. Yosri, E. Goudeli, M. Talei



Biomethane

Carbon-neutral alternative to natural gas with potential to replace **20%** of the energy supplied by gas.



Siloxane

Impurity and byproduct of biogas production. When combusted, siloxane decomposes into **silica particles** that deposit on the internal surfaces of end-use appliances, causing **clogging, overheating, and sensor failure**.

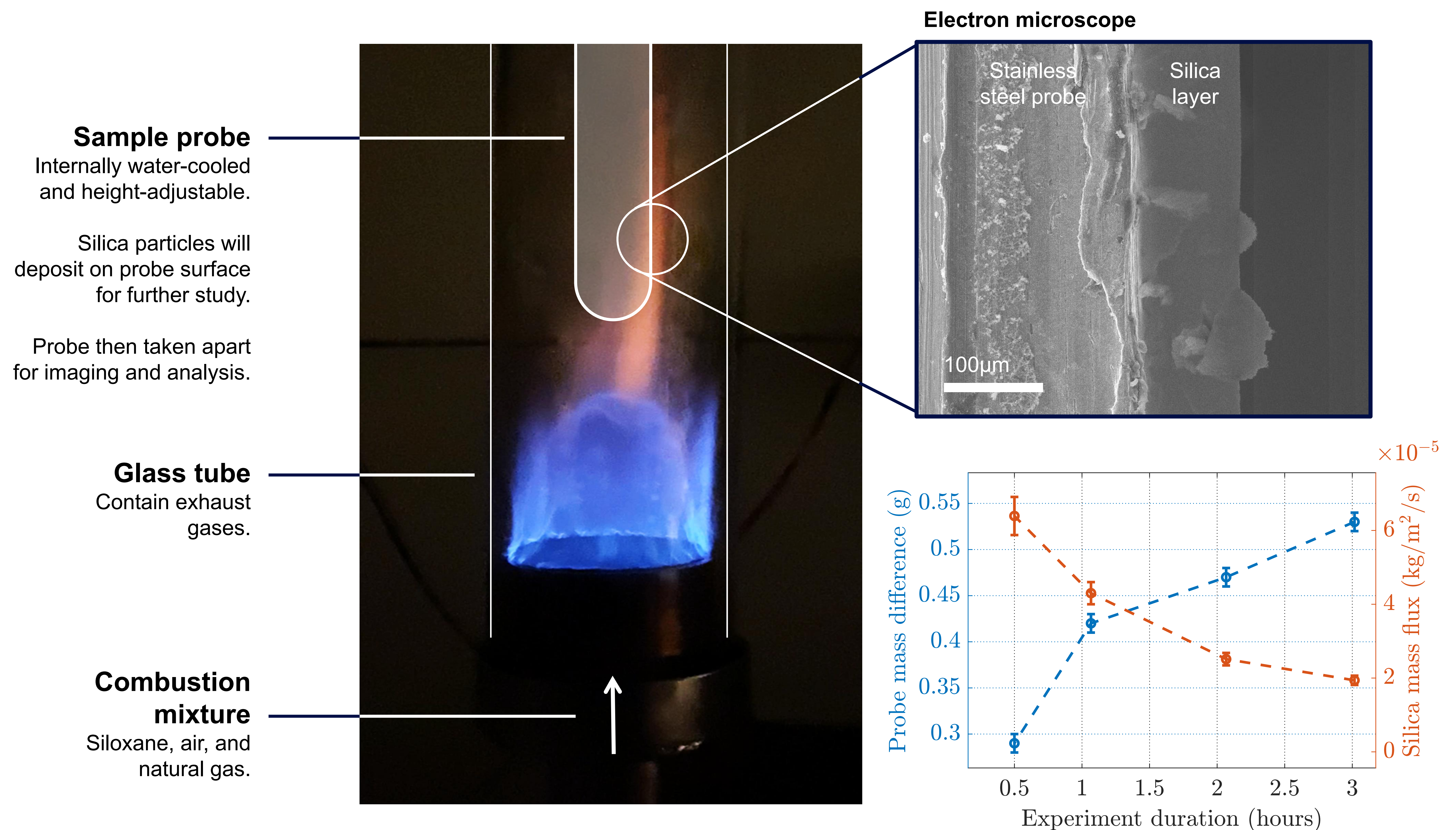
Objectives

1 Study the effects of operating conditions on silica deposition.

2 Develop low-order model to characterise silica deposition.

3 Suggest allowable siloxane concentration in biogas.

Experiments & Results – Non-linear behaviour as expected



Next steps

Experiment with more parameters, such as probe height, siloxane species, and concentration. Develop a model to characterise silica deposition using experiment results.

End goal

Recommend an appropriate siloxane limit for the gas supply to accelerate the adoption of biogas and biomethane in Australia.

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